

Budget Deficits and Trade Deficits: Is There a Link?

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HISTORICALLY, Federal budget deficits have decreased steadily as recovery from recession has progressed, and the budget has approached a balance in the later phase of recovery. In late 1978, however, well into the fourth year of recovery from the most recent recession, the Federal deficit is reported at \$65 billion and shows signs of remaining large for the next several years.

Strong misgivings about the economic impact of current and prospective Federal deficits were expressed by Arthur Burns in a recent panel discussion:

... instead of diminishing or vanishing, as used to be American practice during business cycle expansions — I see the budget deficit mounting. . . . I see a budget deficit this year, including off-budget outlays as we should, of \$65 billion. I see a deficit as large as or larger than that next year. I ask myself the question: do we have responsible financial management by our government at the present time?¹

Walter Heller, appearing on the same panel, responded to Burns' expression of concern with the observation that:

... as long as state and local governments run a \$30 billion surplus and foreign governments run a near \$25 billion trade surplus against us, the federal deficit mainly serves to offset those surpluses.²

This response is typical of the frequently expressed view that the currently sizable Federal deficits are necessary to offset the surpluses generated in other sectors of the economy and trade deficits.³

¹"Tax Revolt: A Cure or a Curse?" *Washington Post*, July 30, 1978. Arthur Burns is a former chairman of both the Council of Economic Advisors (CEA) and the Board of Governors of the Federal Reserve System.

²*Ibid.* Walter Heller also is a former CEA chairman.

³This view, for example, is shared by the CEA. See *Economic Report of the President*, 1978, pp. 88-91. Also see Charles L. Schultze, "Prepared Statement," U.S. Congress, Joint Economic Committee, *The 1978 Economic Report of the President*, 95th Cong., 2nd sess., January 31, 1978, pp. 22-23. Implicit in such a view may be the notion that it is not so much the age or stage of the economic expansion, but the size of the output gap — the distance between the actual and potential output — which should govern the thrust of fiscal policy. Pre-

The Federal budget position is related to the balance of accounts in the other sectors of the economy through the accounting procedures used to measure national economic activity. In this national income accounting framework, a surplus in the budgets of state and local governments, a balance between private domestic saving and investment, and a sizable trade deficit require that the Federal budget be in deficit. However, the national income accounting identity does not, by itself, help explain the coupling of the persistently large Federal budget deficits with the sizable trade deficits that have been in the news lately. Specifically, the accounting relationship sheds no light on the underlying economic behavior in the private and public sectors which has resulted in such deficits. The economic significance of simultaneously large deficits in the Federal budget and in our trade with foreign countries requires analysis of the factors which contribute to the current situation. Such an analysis reveals that the large trade deficit is symptomatic of the inflationary pressures which prevail in the economy, and to the extent that the large Federal budget deficits contribute to such inflationary pressures, the two deficits are causally linked.

National Income Accounting Identity

National income is generated in the process of producing goods and services in the economy and can be thought of simply as the *maximum* amount which the citizens of a nation can consume during a particular accounting period while maintaining the total wealth of the economy intact.⁴ To the extent

sumably, the larger the gap, the more stimulative the policy should be. Such a gap approach to policy formulation suffers, however, from the absence of reliable measures of the output gap. For references, see fn. 21 below. More fundamentally, such an approach tends to divert attention from the more fundamental task of identifying the underlying factors responsible for the emergence and persistence of the gap.

⁴National income accounting has evolved over the years to measure national income and such related economic activities as saving and capital formation (investment). For a thorough discussion of the national income accounting system and other economic accounts, see John W. Kendrick, *Economic Accounts*

that aggregate consumption falls short of national income, *saving* will be generated and national wealth will be larger at the end of the period than at the beginning. Since national income is measured by the value of goods and services produced, an excess of national income over consumption implies a larger stock of goods on hand at the end of the period. National income accountants refer to this increase in the stock of goods as aggregate domestic *investment*.

In a closed economy — one which does not engage in international transactions — aggregate domestic investment cannot be larger than aggregate domestic saving out of national income. Saving is possible only by cutting back on current consumption. Domestic saving, in turn, can be decomposed into private and government components, with government saving being comprised of budgetary surpluses of Federal and state and local (S&L) governments. However, in an open economy — one with transactions beyond its borders — aggregate domestic investment can be larger than aggregate domestic saving to the extent that foreign saving is made available domestically. That is, in an open economy, resources used for domestic investment can come from both domestic and foreign savings. This can be expressed schematically as:

<u>Saving</u>		<u>Investment</u>
Private		Private Domestic
Fed Gov't Surplus		Investment
S&L Gov't Surplus		
Foreign		
Total Saving	=	Total Investment ⁵

These terms can be rearranged to yield the following accounting identity which holds at all times:

$$(1) \text{ Fed budget deficit} = \text{net private saving} + \text{S\&L gov't saving} + \text{foreign saving (made available in U.S.)}$$

Here, net private saving is the excess of *private* domestic saving over *private* domestic investment. Hence, the size of the Federal budget deficit must necessarily equal the sum of savings made available by the state and local governments, foreigners, and net private saving. That is, if the Federal Govern-

ment is to borrow resources to cover its deficits, these resources must be supplied by some combination of net private saving out of current income, budget surpluses in other levels of government, or foreigners' saving out of their current income.

Foreign saving which is made available for domestic uses, however, is the counterpart of the balance on our trade of goods and services with other countries. An excess of imports over exports is called a trade deficit and represents the net saving by foreigners which is made available for domestic uses.⁶

Hence, expression (1) may be rewritten as:

$$(2) \text{ Fed budget deficit} = \text{net private saving} + \text{S\&L gov't saving} + \text{trade deficit}$$

Thus, the statement that the Federal budget deficit serves to offset the sum of state and local government saving and the trade deficit is a correct *accounting* statement only if net private saving is zero or remains unchanged. Data in Table I indicate, however, that net private saving has seldom equalled zero or stayed unchanged.

Expression (2) indicates that there is no necessity for any given change in the trade deficit to be offset by or to induce a comparable, or even any, change in the Federal budget deficit.⁷ With a given trade deficit, offsetting changes in net private saving and/or state and local government surpluses can maintain the accounting identity without any necessary change in the Federal budget deficit. An accounting identity, such as expression (2), provides no useful clue, by itself, for identifying the set of factors which contributed to the recent emergence of deficits in both the trade account and the Federal budget. If such an identity is to be useful for analyzing and designing policy actions affecting both the trade account and the Federal budget, it must be supplemented by analysis of the determinants of the Federal budget deficit and the trade deficit, and the possible link between the two deficits.

The first step in unravelling the possible link between the Federal budget deficit and the trade

and Their Uses (New York: McGraw-Hill Book Company, 1972). For expositional convenience, no distinction is made in this paper between various concepts of national income aggregates such as gross national product, net national product, and national income.

⁵By convention, government sectors in the U.S. are assumed not to engage in any investment activity.

⁶For expositional convenience, net unilateral transfers have been ignored here.

⁷The CEA appears to endorse the view that the trade deficit is somehow determined independently of the factors impinging on other accounts in the identity and that the other accounts, notably the Federal budget, must adjust to preserve the accounting relationship. See *Economic Report of the President*, 1978.

Table I

Selected Balances in the National Income and Product Accounts¹

(in millions of dollars)

	(1) Balance on Federal Budget: Deficit (+) or Surplus (-) ²	(2) Net Private Saving ³	(3) Balance on S&I Gov't Budget: Deficit (-) or Surplus (+)	(4) Trade Balance: Deficit (+) or Surplus (-) ⁴	(5) Statistical Discrepancy ⁵
1962-72	\$ 6,395	\$ 3,138	\$ 2,184	\$ -301	\$1,374
1973	6,711	-9,497	13,003	576	2,629
1974	10,721	-5,070	7,564	2,464 ⁵	5,763
1975	70,584	68,889	6,206	-11,882	7,371
1976	53,807	27,708	20,654	1,235	4,210
1977	48,148	-7,042	29,558	20,891	4,741

¹Based on the national income accounting identity stated in the text, except for the statistical discrepancy: (1) = (2) + (3) + (4) + (5).²Does not include off-budget items.³Gross private saving less gross private domestic investment.⁴Corresponds to net foreign investment in the national income and product accounts, with the signs reversed. Reinvested earnings on foreign investment have not yet been incorporated in this measure of the trade balance.⁵Excludes \$2,010 million paid to India under the Agricultural Trade Development and Assistance Act, that is, \$4,474 - \$2,010.⁶Includes SDR allocations in the 1970-72 period.

Source: Department of Commerce.

deficit requires an understanding of what a trade balance is and what its proximate determinants are.

What Is the Trade Balance?

The trade balance is simply the difference between the value of exports and imports. Alternatively, the trade balance is the difference between the value of national income (or output) and the value of spending on consumption and investment by domestic households, businesses, and government units. In a closed economy, foreign trade is zero, so aggregate domestic spending must be equal to national income (output).⁸ In an open economy, however, aggregate domestic spending can exceed national output and the result is a trade deficit. The trade deficit represents consumption and investment opportunities in excess of

the country's currently produced supply of goods and services.⁹

A trade deficit results, then, *whenever aggregate domestic spending in the United States exceeds national income*. The excess of spending over current income, or equivalently the excess of our aggregate investment over our domestic savings from private and public sectors is made possible by the "abstinence" of foreigners. Foreigners make a portion of their current output available for our current domestic use. In return, they receive assets which represent claims on our *future* output. Therefore, a U.S. trade deficit is determined by those factors that induce (1) an excess of aggregate domestic spending over national income in the United States and (2) a shortfall in aggregate domestic spending over national income in foreign countries.

⁸In national income accounting, the value of national income or aggregate supply (denoted by Y) is equated to the value of aggregate demand, composed of consumer expenditures (C), business expenditures on capital goods (I), purchases of goods and services by various levels of government (G) and the excess of exports over imports (X-F). This accounting identity can be expressed as:

$$\begin{array}{l} \text{Aggregate Supply} \\ Y \end{array} = \begin{array}{l} \text{Aggregate Demand} \\ C + I + G + (X - F) \end{array}$$

Here, X-F is the balance of trade. Aggregate domestic spending refers to the sum C+I+G and has also been called "absorption" in the trade literature. See Sidney S. Alexander, "Effects of a Devaluation on a Trade Balance," *IMF Staff Papers*, Vol. 2 (April 1952), pp. 263-78. An important corollary of this accounting identity is, as mentioned earlier, the necessary equality between aggregate domestic investment and aggregate domestic saving by both private and public units in a closed economy.

⁹Therefore, whereas aggregate domestic investment in a closed economy must necessarily be the difference between the national output and consumption, in an open economy, it is the difference between the national output *augmented by the trade deficit* and consumption. When a nation runs a trade deficit, that is, when its imports exceed its exports, it is often said to be living beyond its means. This is not strictly correct, however. A trade deficit indicates only that a nation is *spending* beyond its current means derived from national income. Whether a nation is also *living* beyond its means depends on how the nation's spending is constituted. An analogy is a business unit which is spending more than its current income but is not considered to be living beyond its means if that spending is used to enlarge its holdings of productive assets. Similarly, should a nation incur a trade deficit to enlarge its productive capacity, it is not living beyond its means. But should the trade deficit result from the nation's economic units consuming more than its national income, it is indeed living beyond its means.

MOS: An Explanation of the Money-Trade Deficit Link

An understanding of the recently publicized coupling of the large Federal deficit with the sizable trade deficit can be achieved based on an economic theory known as macroeconomics of open systems (MOS). This theory emphasizes the interdependence of various markets for goods, services, and assets, both at home and across countries.¹⁰ MOS holds that one way a trade deficit can emerge in a particular country is as a response to excessive growth in that nation's stock of money relative to the demand for it.¹¹

In response to the emergence of an excess supply of money, the spending units in the United States would attempt to restore equilibrium in their money holdings by exchanging their "surplus" money for goods, services, and assets, both of domestic and foreign origins. This attempt to "dishoard" money increases spending across a broad spectrum of goods and assets and results in the attempt to spend more than the value of goods and services produced domestically. Whether such an attempt will succeed depends crucially on what is happening in the foreign economy and the market for foreign exchange.¹²

If the price of foreign exchange is not allowed to change (exchange rates are fixed) and, if the foreign economy were initially in a position where its demand for goods, services, and assets was equally matched by the supply of these available internally at the prevailing prices, the excess demand in the United States would succeed in inducing an increase in imports into the United States. Aggregate domestic spending in the United States would be larger than the value of currently produced output, that is, a trade deficit would result.

In the perspective of MOS, such a money-induced trade deficit under a fixed exchange rate regime is a transient phenomenon primarily because the initial excess supply of money in one country would be eliminated through trade-induced changes in money holdings. In particular, the country running a trade

deficit will experience a reduction in its money supply whereas the surplus country's money holdings will increase.¹³ That is, the trade balance is the mechanism through which an initial excess supply of money in one country gets redistributed across countries, thereby inducing adjustments in aggregate spending relative to the value of domestic production.

Should the countries be operating under a purely flexible exchange rate regime, however, the initial emergence of an excess supply of money in one country does not necessarily lead to that country running a trade deficit. This would be the case if an initial increase in aggregate domestic spending spills over into the market for foreign exchange and induces an immediate upward adjustment in the exchange rate, making the foreign currency, and thereby foreign goods, more dear.

The initial excess supply of money in a country under a managed float system, such as the one that has been in operation since early 1973, would induce an excess of imports over exports if monetary authorities intervened to resist the downward pressure on the country's exchange rate.¹⁴ Such a trade deficit would persist as long as the excess supply of money is not eliminated by the trade-induced redistribution of money holdings across countries, and by adjustment in the price levels in the trading countries.

Not all trade deficits reflect an excess supply of money, necessarily implying pressure on the exchange rate or requiring an adjustment in the exchange rate.¹⁵ There would be no pressure on the

¹³These changes in the stocks of money held in the deficit and surplus countries would bring about an adjustment in the rates of aggregate domestic spending relative to the values of national output in the deficit and surplus countries, thereby tending to restore balances in the trade accounts and in quantities of money supplied relative to demand. For an analysis of the monetary consequences of the trade surplus, and deficit, see Richard E. Caves and Ronald W. Jones, *World Trade and Payments* (Boston: Little, Brown and Company, 1973).

¹⁴It is immaterial whether it is the deficit country's monetary authority or that of the surplus country which engages in intervention. See Anatol B. Balbach, "The Mechanics of Intervention in Exchange Markets," this *Review* (February 1978), pp. 2-7.

¹⁵This is because the exchange rate is influenced not only by what is happening to the balance in the trade account (reflecting flows of *currently* produced goods and services), but also by what is happening to the balance in the capital account (reflecting the flow of claims against *future* goods and services) and to the balance in the money account. In general, the following relationship must hold for the balance of payments:

$$\text{Balance on money account} = \text{balance on capital account} + \text{balance on trade account.}$$

Therefore, should a deficit on trade account be just offset

¹⁰See, for example, Jacob A. Frenkel and Harry G. Johnson, eds., *The Monetary Approach to the Balance of Payments* (London: George Allen & Unwin Ltd., 1976).

¹¹Should there be a link between the Federal budget deficit and monetary expansion, the trade deficit might be linked causally to the monetary expansion induced by the Federal budget deficit.

¹²It is not the absolute amount of excess aggregate demand in one country that is crucial, but such an excess relative to the excess demand in other countries. To simplify exposition, a two-country world (the United States and a foreign country) is assumed here.

exchange rate, however, if the emerging deficit in the trade account is exactly matched by a surplus in the capital account. That is, should the demand for foreign currencies¹⁶ be exactly matched by the supply of foreign currencies at the prevailing exchange rate, the exchange rate would not change even were there to be an excess of imports over exports. This is because a net inflow of goods and services is exactly matched by a net inflow of funds from foreigners who are willing to make investments in the deficit country. In this case, the net purchase of goods and services from foreigners is financed by the net sale of investment assets to foreigners.¹⁷ The exchange rate would not change even though there is a trade deficit.

The willingness of *private* foreigners to save and make that saving available in the United States holds a key to whether there is an equilibrium in our international transactions. Such an equilibrium is characterized by an absence of pressures to bring about changes in the pattern of trade and capital flows or in the exchange rate. Since the overall balance of payments must be zero,¹⁸ when one speaks of the balance in the trade and capital accounts as a necessary condition for an equilibrium in international transactions, one refers to the balance of transactions designed to finance consumption and investment decisions, rather than official transactions conducted by the monetary authorities to maintain a target exchange rate.¹⁹

by a surplus on capital account, there would be no change in the money holdings and no pressure on the exchange rate. From this perspective, a change in the exchange rate is indeed a monetary phenomenon. It should be noted that, under a flexible exchange rate regime, foreign trade induced changes in the money stock in both deficit and surplus countries could occur only if there are adjustment lags in the process determining the exchange rate.

¹⁶Such a demand helps to alter both the composition and the level of consumption and investment expenditures from what is available solely from domestic production.

¹⁷Such a voluntary (or autonomous) inflow of capital is possible if, for example, an improvement occurs in the expected rate of return on investment in the home country. This (relative) change in the expected returns on investment would call for a redistribution of investment expenditures across countries. If there are no restrictions on the flows of both capital and goods across borders, the home country's investment would be augmented to the extent of the trade deficit it runs, with the trade deficit being just offset by the voluntary supply of savings made available to the home country by foreigners. The trade deficit is a mechanism by which a country obtains command over current resources in exchange for a promise to pay out of the augmented flow of output in the future.

¹⁸This is due to the system of double-entry bookkeeping. See Donald S. Kemp, "Balance-of-Payments Concepts — What Do They Really Mean?" this *Review* (July 1975), pp. 14-23.

¹⁹Official transactions are more likely to be conducted to maintain a target exchange rate. Under an adjustable peg sys-

Table II

Selected Balances in the Balance
of Payments Accounts¹
(in millions of dollars)

	(1) Trade Balance: Surplus (+) or Deficit (-) ²	(2) Net Private Capital Outflow (-) or Inflow (+)	(3) Net Official Capital Outflow (-) or Inflow (+) ³	(4) Statistical Discrepancy ⁴
1962-72	\$ 1,971	\$-4,172	\$ 3,405	\$-1,204
1973	6,885	-8,024	3,864	-2,725
1974	1,719	-9,947	9,913	-1,685
1975	18,445	-26,725	2,830	5,450
1976	4,339	-24,968	11,330	9,299
1977	-15,221	-16,994	33,214	-999

¹From balance of payments accounts: (1) + (2) + (3) + (4) = (0).

²Corresponds to balance on current account in the balance of payments accounts. Data reflect the recent change in definition to include reinvested earnings on foreign investment. The major difference between this measure of the trade balance and the national income and product accounts measure given in Table I is the incorporation of the reinvested earnings on foreign investment.

³Net increase in foreign official assets in the U.S. less net increase in the U.S. official assets abroad.

⁴Includes SDR allocations to the U.S. in the 1970-72 period.

Source: Department of Commerce.

The Recent U.S. Trade Deficit

The recent trade deficit of the United States has been the kind that reflects an imbalance in *both* the trade and private capital accounts. Not only has the trade deficit not been matched and offset by a surplus in the *private* capital account, the movement in the private capital account was perverse; that is, there has been a net outflow of private capital. This means that U.S. private investment abroad has exceeded foreign private investment in the United States, in spite of the fact that foreign countries have been supplying, on net, their currently produced goods and services to the United States. Not only is foreign *private* saving not being made available to finance Federal budget deficits and private domestic investment in the United States, private savings in the United States is being directed to foreign economies. As Table II shows, given the constraint of the overall balance in the balance of payments, the net deficit on trade and private capital accounts has been matched by the net surplus in the accounts of foreign *official* institutions.

tem, such as the Bretton Woods system which was in operation from the end of World War II through early 1973, the target rate had been the officially-agreed-upon par rate. Under a dirty float system, such as the current regime, which has been in existence since early 1973, the target rate is whatever rate the intervention authority considers "appropriate." Needless to say, a target rate may not coincide with the market-determined equilibrium exchange rate.

Foreign governments, in effect, are financing the excess of our current spending over national income. The recent bulge in the trade deficit has also been accompanied by a sharp drop in the external value of the dollar.

The data indicate that the recent net inflow of resources (trade deficit) into the United States does not reflect the deliberate choice of foreign *private* economic units to invest their resources in the United States, that is, to make their savings available for our use. The data show, instead, massive purchases of U.S. assets by foreign official institutions. This, in turn, reflects official efforts to prop up the value of the dollar in foreign exchange markets.²⁰

From this perspective, the recent U.S. trade deficit can be interpreted as reflecting an excess supply of money in the United States. Given this interpretation, a link between the Federal budget deficit and the trade deficit can be found if a case can be made for the view that the deficit in the Federal budget has, at least in part, induced the excess supply of money in the United States.

How A Federal Budget Deficit Emerges

A Federal budget deficit emerges whenever Federal expenditures exceed receipts. Federal expenditures reflect prior decisions arrived at through political processes to provide for collective goods and effectuate income transfers. As such, they are less susceptible to the state of the economy than are tax revenues. Tax revenues are determined both by the tax laws and the state of the economy.

The balance in the Federal budget, therefore, reflects the complex set of forces interacting through both the political and economic systems. When expenditures exceed revenues, the resulting deficit must be financed either by borrowing or by printing money (or its equivalents, such as the sale of newly issued Government bonds to the central bank). Such a monetary accommodation of the budget deficit could occur, for example, if the debt financing of the deficit is perceived as exerting a significant upward pressure on interest rates *and* if moderating or resisting an upward pressure on interest rates is judged to be a desirable policy objective.²¹

²⁰Ironically, however, in the absence of official intervention in foreign exchange markets, the U.S. trade deficit would have been considerably smaller due to the effects of a faster and/or larger drop in the value of the dollar on the prices of foreign goods relative to those of U.S. goods.

²¹The concepts of active and passive deficits have been devised to assess the thrust of Federal budget policy. See, for ex-

A Link Between the Budget and Trade Deficits

This channel of budget-deficit-induced monetary expansion can provide a link between the Federal budget deficit and the trade deficit. Schematically, the causation would run:

Federal deficit → induced monetary
expansion → trade deficit.

The available evidence on the relationship between the Federal budget deficit and monetary expansion across countries indicates that the deficit-to-money link is less than water-tight *on average*.²² Such a finding, of course, may reflect the fact that monetary policy is pursued, at least on occasions, for reasons other than accommodating the financing requirements of the government.²³ However, such a finding does not rule out the possibility that recent U.S. trade deficits reflect a monetary accommodation of persistently large U.S. Federal deficits.

The recent accelerations in money growth and inflation in the United States, in clear contrast to decelerations experienced in other countries against whose currencies the U.S. dollar has depreciated, have been accompanied by persistent Federal budget deficits

ample, Keith M. Carlson, "Estimates of the High-Employment Budget and Changes in Potential Output," this *Review* (August 1977), p. 18. The size of the active deficit indicates the extent of the unwillingness of the electorate to pay for government activities by current taxes on a pay-as-you-go basis, whereas the size of the passive deficit primarily reflects cyclical effects. The passive deficit is always an *ex post* concept whereas the active deficit may be either realized or potential. The (realized) active deficit is thought more likely to induce monetary accommodation, lest failure to do so would put greater upward pressure, compared to a passive deficit of equal size, on interest rates. However, to the extent there is no systematic relationship between active and passive deficits, the estimated link between the total budget deficit and monetary expansion will not correctly reflect the presumably more reliable underlying link between the active deficit and monetary expansion. And to the extent there is a downward bias in the estimates of active deficits, due to an upward bias in estimated potential output, the estimated effects of active deficits on monetary accommodation would be understated. For a discussion of possible upward bias in potential output, see Robert H. Rasche and John A. Tatom, "Energy Resources and Potential GNP," this *Review* (June 1977), pp. 10-24; also J. M. Perloff and M. L. Wachter, "A Production Function — Non-accelerating Inflation Approach to Potential Output: Is Measured Potential Output Too High?" (paper presented at the Carnegie-Rochester Conference, April, 1978).

²²For some recent evidence, see Michael Bazdarich, "Inflation and Monetary Accommodation in the Pacific Basin," Federal Reserve Bank of San Francisco *Economic Review* (Summer 1978), pp. 23-36.

²³Also, such a finding may reflect the fact that the total deficit, rather than only the active deficit, is related to monetary expansion. In the absence of reliable measures of potential output upon which the estimates of an active deficit crucially depend, such a possibility must remain in the realm of plausible conjecture.

Table III

Money Growth, Inflation, and Budget Deficits
(1962-72 = 100)

	1962-72	1973	1974	1975	1976	1977
Money Growth¹						
U.S.	100	156	115	88	106	148
Japan	100	140	70	55	76	37
Germany	100	71	73	168	126	101
Inflation (Wholesale Prices)¹						
U.S.	100	624	900	438	219	290
Japan	100	1,436	2,854	273	464	164
Germany	100	388	788	276	229	153
Budget Deficits as a % of GNP²						
U.S.	100	58	73	469	315	257
Japan	100	150	124	442	183	568
Germany	100	70	233	752	608	423

¹Average rate of growth (percent) over 1962-72 has been set equal to 100.

²Average ratio of budget deficit to GNP over 1962-72 has been set equal to 100. Source: International Monetary Fund.

which are large compared to the historical experience (see Table III). In the absence of such a rapid monetary expansion and such an adverse development on the inflation front, the United States would not have experienced such a sizable trade deficit *accompanied by* the sizable depreciation in the external value of the dollar.²⁴ The data also indicate that the budget deficits (as measured relative to the sizes of the economies) in the United States have been associated with greater monetary accommodation than those of Japan since 1976 and Germany since 1975. Whereas the average deficits in the United States over the 1976-77 period were smaller than those of Japan and Germany, as measured relative to the base period spanning 1962-72, the average rate

of monetary expansion in the United States relative to that in the base period has been the highest.²⁵

Summary and Conclusion

It has been recently suggested that the current large Federal budget deficit is somehow linked to the surpluses in the state and local governments' budget and the deficit in the trade account. The accounting identity which relates these magnitudes offers no clue by itself as to the possible behavioral relationship that could causally link trade and Federal budget deficits.

The paper presents a theoretical frame of reference within which the recent movements in the Federal budget deficit and the trade deficit can be explained. Macroeconomics of open systems provides a key to the understanding of the recent experience. According to this view, the current trade deficit in the United States reflects primarily the fact that our rate of inflation exceeds that of our major trading partners, such as Germany and Japan, thereby making our goods and services more expensive relative to theirs. The declining value of the U.S. dollar in international currency markets and the *form* of current foreign investment in the United States suggest that an excess supply of money is the source of our inflation. To the extent that the recent excess supply of money in the United States was induced by the monetization of the historically large budget deficit, the chain of causation would run from the large Federal budget deficit to the large trade deficit, rather than the other way around.

Within the perspective of the macroeconomics of open systems then, the fundamental cause both of inflation (the fall in the internal value of the dollar) and of exchange rate depreciation (the fall in the external value of the dollar) is traced to excessive monetary expansion relative to demand, whether or not attributable to accommodation of the Federal budget deficit. Within such a perspective, nothing less than the elimination of such an excess supply of money would be an effective and enduring antidote against both.

²⁴It has often been noted that the recent decline in the external value of the U.S. dollar against such currencies as the Japanese yen and the German mark has been "too large" to be fully explained by the relative difference in *actually measured* rates of inflation or of monetary expansion. Such observations have been used in the past to reject the monetary interpretation of exchange rate movements. However, reformulation of the monetary approach which incorporated *expected* differences in rates of inflation and of monetary expansion helped to strengthen the case for it. See, for example, Thomas M. Humphrey, "The Monetary Approach to Exchange Rates: Its Historical Evolution and Role in Policy Debates," *Federal Reserve Bank of Richmond Economic Review* (July/August 1978), pp. 2-9.

²⁵This may be due to the failure of the recorded deficits to reflect the relative size of the realized active deficits, that is, a proportionately greater fraction of the German and Japanese budget deficits may be passive.